

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Appl. No. : 09/740,528 Confirmation No. 2040  
Applicants : Rabubdranath Dutta  
Title: System and Method of Administering Exam Content  
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TC/A.U. : 2143  
Examiner : Jerry B. Dennison  
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Customer No. : 48,916

**BRIEF ON APPEAL**

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Commissioner for Patents  
P.O. Box 1450, Alexandria, VA 22313-1450

This is an appeal from the Final Office Action, mailed on July 17, 2007, finally rejecting claims 1-3, 5-14 and 16-21.

The fee for filing this Brief on Appeal is \$510.00 and is being paid electronically at the time of filing of this Brief. If that amount is insufficient, or should any additional fees under 37 C.F.R. § 1.16 to 1.21 be required for any reason relating to the enclosed materials, the Commissioner is authorized to deduct said fees from IBM Corporation, Deposit Account No. 09-0447.

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**REAL PARTY IN INTEREST**

The real party in interest is International Business Machines Corp. (IBM) of Armonk, New York

**RELATED APPEALS AND INTERFERENCES**

The Applicants are not aware of any related appeals, interferences or judicial proceedings that will directly affect, be directly affected by or have a bearing on the Board's decision in the pending appeal.

**STATUS OF CLAIMS**

Claims 1-3, 5-14 and 16-21 are currently pending and have been finally rejected.

Claims 20 and 21 are rejected under 35 U.S.C. §112 as failing to comply with the written description requirement.

Claims 1-3, 5-14 and 16-21 are rejected under 35 U.S.C. §103(a) as being unpatentable over DiNicola et al. (U.S. Pat. No. 6,288,753; hereinafter referred to as "DiNicola") in view of Sonnenfeld (U.S. Pat. No. 6,418,298).

**STATUS OF AMENDMENTS**

All amendments to the claims have been entered.

## **SUMMARY OF CLAIMED SUBJECT MATTER**

In general, the present invention relates to a system and method for the administering of academic exams. Each claim being appealed is summarized below. References to the Specification refer to the paragraphs of the published application, U.S. Pat. App. No. 2002/0078139, published June 20, 2002.

**Claim 1** is an independent claim that relates to a method for administering exam content over a network (206, FIG. 2; ¶0034). An exam administrator registers an exam with a server (800, FIG. 8; ¶0049). After a student on a client (700, FIG. 8A; ¶0044) makes a request to the server (800, FIG. 8; ¶0049) to take an exam (810, FIG. 8; ¶0048), the server sends instructions to the client (700, FIG. 8A; ¶0044) to take pictures of the student (836, FIG. 8C; ¶0048) during the exam. The picture or pictures (926, FIG. 9B; ¶0052) of the student captured during the exam are compared to an archived picture (928, FIG. 9B; ¶0052) of the student during the exam in order to verify the student's identity during the exam (¶0051).

**Claim 2** is a dependent claim that includes all the elements of **Claim 1**, as described above, for administering exam content over a network (112, FIG. 1). In addition, **Claim 2** includes an exam content generator (¶¶0028-0029) with access to registered exams (¶0030; FIG. 8B, ¶0047) on the server (104, FIG. 1; ¶0030).

**Claim 3** is a dependent claim that includes all the elements of **Claim 1**, as described above, for administering exam content over a network (112, FIG. 1). In addition, **Claim 3** includes an exam grader (¶0033) with access to a student's answers (¶0033) on the server (104, FIG. 1; ¶0030).

**Claim 5** is a dependent claim that includes all the elements of **Claim 1**, as described above, for administering exam content over a network (112, FIG. 1). In addition, **Claim 5** includes the element that the transcript further comprises at least one video image of the student (910, FIG. 9A; ¶0051 and 928, FIG. 9B; ¶0052).

**Claim 6** is a dependent claim that includes all the elements of **Claim 1**, as described above, for administering exam content over a network (112, FIG. 1). In addition, **Claim 6** includes registering a plurality of exams with the server (¶0052).

**Claim 7** is a dependent claim that includes all the elements of **Claim 1**, as described above, for administering exam content over a network (112, FIG. 1). In addition, **Claim 7** includes recording a student's answers to at least one exam question presented by the server (840, FIG. 8C, ¶0048); and grading the student's answers to generate an exam result (862, FIG. 8D; ¶0049).

**Claim 8** is an independent system claim that relates to a system for administering exam content to a number of clients over a network (206, FIG. 2; ¶0034). **Claim 8** includes a memory (335, FIG. 3) coupled to a processor (334, FIG. 3, ¶0035); logic to register at least one exam (¶0030; FIG. 8B, ¶0047) submitted by an exam provider (¶0029) with the server (800, FIG. 8; ¶0049); logic to transmit a video frame of a student to the server at least once during the exam to verify the identity of the student (836, FIG. 8C; ¶0048); logic to store the video frame in conjunction with the transcript; and logic to provide access to the transcript to at least one third party (¶0050).

**Claim 9** is a dependent claim that includes all the elements of **Claim 8**, as described above, for administering exam content over a network (112, FIG. 1). In addition, **Claim 9** includes instructions for providing an exam grader (¶0033) with access to a student's answers (¶0033) on the server (104, FIG. 1; ¶0030).

**Claim 10** is a dependent claim that includes all the elements of **Claim 8**, as described above, for administering exam content over a network (112, FIG. 1). In addition, **Claim 10** includes instructions for providing an exam content generator (¶¶0028-0029) with access to registered exams (¶0030; FIG. 8B, ¶0047) on the server (104, FIG. 1; ¶0030).

**Claim 11** is a dependent claim that includes all the elements of **Claim 8**, as described above, for administering exam content over a network (112, FIG. 1). In addition, **Claim 11**

includes means for accepting and storing (¶0048) video images ((926, FIG. 9B; ¶0052)) of the student.

**Claim 12** is a dependent claim that includes all the elements of **Claim 8**, as described above, for administering exam content over a network (112, FIG. 1). In addition, **Claim 12** includes means for registering a plurality of exams with the server (¶0052).

**Claim 13** is a dependent claim that includes all the elements of **Claim 8**, as described above, for administering exam content over a network (112, FIG. 1). In addition, **Claim 13** includes means for recording a student's answers to at least one exam question presented by the server ((840, FIG. 8C, ¶0048) and means for grading the student's answers to generate the exam result (862, FIG. 8D; ¶0049).

**Claim 14** is an independent method of manufacture claim that relates to a system for administering exam content to a number of clients over a network (206, FIG. 2; ¶0034). **Claim 14** includes instructions for registering at least one exam submitted by an exam provider with the server (800, FIG. 8; ¶0049), instructions for generating a transcript in response to answers submitted by a student to at least one exam question resident on the server (862, FIG. 8D; ¶0049), instructions for transmitting a video frame of the student to the server at least once during an exam to verify the identity of the student (836, FIG. 8C; ¶0048), instructions for storing the video frame in conjunction with the transcript (836, FIG. 8C; ¶0048), and instructions for providing access to the transcript to at least one third party (¶0050).

**Claim 16** is a dependent claim that includes all the elements of **Claim 14** as described above, for administering exam content over a network (112, FIG. 1). In addition, **Claim 16** includes instructions for providing an exam content generator (¶¶0028-0029) with access to registered exams (¶0030; FIG. 8B, ¶0047) on the server (104, FIG. 1; ¶0030).

**Claim 17** is a dependent claim that includes all the elements of **Claim 14** as described above, for administering exam content over a network (112, FIG. 1). In addition, **Claim 17**

includes instructions for providing an exam grader (¶0033) with access to a student's answers (¶0033) on the server (104, FIG. 1; ¶0030).

**Claim 18** is a dependent claim that includes all the elements of **Claim 14** as described above, for administering exam content over a network (112, FIG. 1). In addition, **Claim 18** includes instructions for registering a plurality of exams with the server (¶0052).

**Claim 19** is a dependent claim that includes all the elements of **Claim 14** as described above, for administering exam content over a network (112, FIG. 1). In addition, **Claim 19** includes instructions for recording a student's answers to at least one exam question presented by the server (840, FIG. 8C, ¶0048); and grading the student's answers to generate an exam result (862, FIG. 8D; ¶0049).

**Claim 20** is a dependent claim that includes all the elements of **Claim 14** as described above, for administering exam content over a network (112, FIG. 1). In addition, **Claim 20** includes instructions for recording in the transcript at least one video image of the student recorded at a time other than during the exam (¶0052) to compare with the at least one video frame transmitted during the exam (¶¶0051-0052).

**Claim 21** is a dependent claim that includes all the elements of **Claim 8** as described above, for administering exam content over a network (112, FIG. 1). In addition, **Claim 21** includes storing within the transcript at least one video image of the student recorded at a time other than during the exam (¶0052) to compare with the at least one video frame transmitted during the exam (¶¶0051-0052).

**GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

1. Whether a group of claims consisting of **dependent claims 20 and 21** fail to comply with the written description requirement of 35 U.S.C. §112, ¶1.
2. Whether a group of claims consisting of **independent claims 1, 8 and 14 and dependent claims 2, 3, 5-7, 9-13 and 16-21** are unpatentable under 35 U.S.C. §103(a) over DiNicola in view of Sonnenfeld.

## ARGUMENTS OF APPELLANTS

1. **Whether a group of claims consisting of dependent claims 20 and 21 fail to comply with the written description requirement of 35 U.S.C. §112, ¶1.**

### **Claims 20 and 21**

In the Final Office Action, dated July 17, 2007, (FOA), the Examiner states the following:

The specification does not provide any evidence regarding when this image has been taken. The specification also does not provide any evidence that shows this picture is used for comparison. ... Examiner has reason to believe that this image 910 was taken during the exam as well, and a professor/administrator uses the picture to make sure he/she recognizes the student. There is no comparison to another picture. Verification takes place by the professor recognizing the student.

(p. 3, line 18 through p. 4, line 4). Applicants contend that there is sufficient support both for a student's picture in a transcript taken at a time other than during a test and for a comparison of a student's picture in the transcript. The Specification describes a picture taken "just before the exam" and, based upon the plain meaning of the terms, "before the exam" is clearly not "during the exam."

The Specification also states, "The exam result is displayed on a transcript 926 which may also contain image 928 of the student along with identification information such as the student's name and address etc" (¶0052; lines 8-10). It seems reasonable to conclude from the context that image 928 is entered in the transcript at the time the student's name and address are entered, i.e. when the file is created.

In addition, images taken at random during the test are identified as image file 930, which is distinct from both image 928 and the student image illustrated in transcript 926. Other examples of images include FIG. 9A, which illustrates a student picture 910 and images file 916, and FIG. 9B, which illustrates several different groups of pictures, including pictures 928, picture 928 and pictures 930.

The Specification describes the pictures of **FIG. 9A** as follows:

There also is an image of the student **910** for verification of the student's identification if necessary. Links to the exam questions **912**, answers **914** and additional images of the student taken during the exam **916** are also available.

(¶0051, lines 4-7). Image **910** is described as "for verification of the student's identification if necessary" and is illustrated as distinct from images **916**, which are taken during the exam. The FOA states that the "verification takes place by the professor recognizing the student while previously acknowledging that a professor/administrator uses the picture. First, "verify[ing] the identity of a student" based only upon pictures taken at the time of a test is not reliable because a professor would need a relationship with each student to verify the correct individual is taking the test. The FOA merely assumes this to be the case. Even if a professor has sufficient relationships with particular students in a typical class room setting, it should be noted that the claimed technology is directed to remotely administered classes and tests, which make the development of such relationships unlikely. Further, the FOA acknowledges that an administrator may grade a test. In that scenario, an administrator would, in all likelihood, not have relationships with individual students and thus not have the capacity to verify that an individual taking a test is a particular student without a reference image.

In short, as explained above, the disclosed technology not only implicitly requires a picture taken at a time other than the test to verify that a student taking an exam is the correct student, but Applicants also contend there is sufficient support in the Specification for this limitation. The Examiner's assumption that a professor or administrator could verify a student's identity by recognizing the student from images taken during a test is simply not realistic. Therefore, Applicants submit that the current grounds of rejection are in error and respectfully request the §112, ¶1 rejections of claims 20 and 21 be reversed.

2. **Whether a group of claims consisting of independent claims 1, 8 and 14 and dependent claims 2, 3, 5-7, 9-13 and 16-21 are unpatentable under 35 U.S.C. §103(a) over DiNicola in view of Sonnenfeld.**

Briefly, the Applicants' claimed subject matter is directed to a system and method enables the verification of the identity of a student both concurrently with and after the taking of a test, or exam. Specifically, a video frame of a student transmitted during an exam is stored in conjunction with the transcript associated with the student rather than merely in conjunction with a particular classroom situation (FIG. 9A, ¶51, lines 1-10) as in DiNicola. Applicants believe that the prior art of record neither suggests nor teaches this aspect of the disclosed technology. This feature enables a transcript to be verified with respect to a particular student, perhaps against an archived image of the student stored in the student's records, at any time after the test without resorting to an archived image of the entire class, as would be necessary with DiNicola.

The addition of Sonnenfeld does not cure this deficiency. The cited portion of Sonnenfeld states:

It is noted that it may also be desired to seek to prevent a user from viewing or receiving information other than that provided by the test designer. This may be effected, for example, by providing a closed software application that prevents the user from employing the full capabilities of the client computer. A video camera, for example ITU H.323 videoconferencing or still image format such as JPEG or GIF, and screen content monitor application may also be provided to proctor the test. The student keyboard may also be monitored for suspicious activity or hiatuses in activity.

(col. 3, lines 30-40; *emphasis added*). Sonnenfeld does not employ a camera to verify the identity of a test taker but rather to "prevent a user from viewing or receiving information other than provided by the test designer." This action does not require that a video or image be stored for later use and there is no suggestion in Sonnenfeld of such an action. In fact, all the actions relating to Sonnenfeld's camera and the images are taken at the time of the test; i.e. there is no suggestion of image storage prior to a test and no comparison to an image in a transcript.

In an Appeal Brief, dated April 4, 2005, (Appeal Br.) Applicants explained that DeNicola suggests two objects of the invention: 1) “providing a system for providing live interactive distance learning to at least one remote location” and 2) “providing a system for providing on-line testing and evaluation to remotely located end users” (col. 4, lines 21-23 and 51-53). The only time images are transmitted is during the implementation of the first object of the invention. In other words, the student images of DeNicola are employed to provide the teacher, or “Instructor,” of a particular online course a class-like atmosphere (col. 4, lines 46-51; col. 8, lines 24-29). DeNicola describes the transmission of images to an “Instructor,” who views groups of students in class room settings (see Element 24, Figure 2).

In contrast, DeNicola’s testing, i.e. the second object of the invention, is performed on individual students in conjunction with a “Test Administrator” (col. 11, line 48 through col. 13, line 63). There is no suggestion of transmitted student images with respect to either student testing in general or the Test Administrator in particular. Even if DeNicola’s Instructor conducted testing, which Applicant contends is not suggested by the cited art, there is no mechanism suggested for the Instructor to correlate a specific student’s image from among images of groups of students to a specific test for the purpose of validating the test.

In the Board of Patent Appeals and Interferences (BPAI Opinion), dated September 22, 2006, the Administrative Patent Judges stated in agreement:

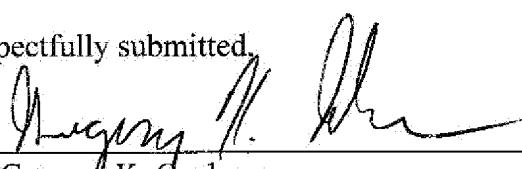
Regarding the on-line testing, evaluation and reporting system, we agree with the appellant that “[t]here is no suggestion of transmitted student images with respect to either student testing in general or the Test Administrator in particular.”  
(Appeal Br. At 9.)

(BPAI opinion at 5). The O.A. relies on Sonnenfeld for this feature, which as explained above Applicants contend is not appropriate.

Therefore, Applicants submit that the current grounds of rejection are in error and that the independent claims 1, 8 and 14 and dependent claims 2, 3, 5-7, 9-13 and 16-21 are in condition for allowance. In addition dependent claims 2, 3, 5-7, 9-13 and 16-21 are allowable because they each depend upon one of the allowable independent claims. Therefore, a reversal of the §103(a) rejections of claims 1-3, 5-14 and 16-21 is respectfully solicited.

Date: February 15, 2008

Respectfully submitted,

  
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**CLAIMS APPENDIX**  
(Currently Pending Claims)

1. (Previously presented) A method of administering exam content from a server to at least one client over a network, the method comprising:  
registering at least one exam submitted by an exam provider with the server;  
transmitting a video frame of a student to the server at least once during the exam to verify the identity of the student;  
generating a transcript in response to answers submitted by the student to at least one exam question resident on the server;  
storing the video frame in conjunction with the transcript; and  
providing access to the transcript to at least one third party.
2. (Original) The method of claim 1 further comprising providing an exam content generator with access to registered exams on the server.
3. (Original) The method of claim 1 further comprising providing an exam grader with access to a student's answers on the server.
4. (Cancelled)
5. (Previously presented) The method of claim 1 wherein the transcript further comprises at least one video image of the student.
6. (Original) The method of claim 1 further comprising registering a plurality of exams with the server.
7. (Original) The method of claim 1 further comprising recording a student's answers to at least one exam question presented by the server; and grading the student's answers to generate an exam result.

8. (Previously presented) A system for administering exam content to a number of clients over a network comprising:
- a processor;
  - a memory coupled to the processor;
  - a computer readable medium coupled to the processor, the computer readable medium containing executable program instructions for:
    - registering at least one exam submitted by an exam provider with the server;
    - transmitting a video frame of a student to the server at least once during the exam to verify the identity of the student;
    - generating a transcript in response to answers submitted by the student to at least one exam question resident on the server;
    - storing the video frame in conjunction with the transcript; and
    - providing access to the transcript to at least one third party.
9. (Original) The system of claim 8 further comprising instructions for providing the exam grader with access to the answers submitted by the student.
10. (Original) The system of claim 8 further comprising instructions for providing an exam content generator with access to the registered exams.
11. (Original) The system of claim 8 wherein the server comprises a means for accepting and storing video images of the student.
12. (Original) The system of claim 8 wherein the server comprises a means for registering a plurality of exams with the server.
13. (Original) The system of claim 8 wherein the server comprises a means for recording a student's answers to at least one exam question presented by the server; and a means for grading the student's answers to generate the exam result.

14. (Previously presented) A computer program product on a computer readable medium for use in a data processing system for administering exam content from a server to a number of clients over a network, comprising:

instructions for registering at least one exam submitted by an exam provider with the server;

instructions for generating a transcript in response to answers submitted by a student to at least one exam question resident on the server;

instructions for transmitting a video frame of the student to the server at least once during an exam to verify the identity of the student;

instructions for storing the video frame in conjunction with the transcript; and

instructions for providing access to the transcript to at least one third party.

15. (Cancelled)

16. (Previously presented) The product of claim 14 further comprising instructions for providing an exam content generator with access to registered exams on the server.

17. (Previously presented) The product of claim 14 further comprising instructions for providing an exam grader with access to a student's answers on the server.

18. (Previously presented) The product of claim 14 further comprising instructions for registering a plurality of exams with the server.

19. (Previously presented) The product of claim 14 further comprising:

instructions for recording a student's answers to at least one exam question presented by the server; and

instructions for grading the student's answers to generate the exam result.

20. (Previously presented) The product of claim 14 further comprising instructions for recording in the transcript at least one video image of the student recorded at a time other than during the exam to compare with the at least one video frame transmitted during the exam.

21. (Previously presented) The system of claim 8 further comprising storing within the transcript at least one video image of the student recorded at a time other than during the exam to compare with the at least one video frame transmitted during the exam.

**EVIDENCE APPENDIX**

No evidence has been submitted in conjunction with this application.

**RELATED PROCEEDINGS APPENDIX**

There are currently no related proceedings associated with this application.